SOLICITATION DE-PS07-00ID13962
Biobased Products Industry

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AGENCY: Department of Energy, Idaho Operations Office.

ACTION: Solicitation for Financial Assistance: DE-PS07-00ID13962, Biobased Products Industry Solicitation.

SUMMARY: The U.S. Department of Energy, Office of Industrial Technologies, is seeking applications from private and public institutions of higher learning to promote multidisciplinary education and training programs for graduate students at the Masters or Ph.D. levels in the area of renewable bioproducts. Approximately 3-5 grant awards will be made, ranging from approximately $70,000 to $100,000 each a year for a maximum of three years in duration. These grants will cover both the costs for establishing a new cross-cutting academic and research program in this field as well as full stipends for 2 or so deserving graduate students at the Masters or Ph.D. level.

The emerging biobased products industry uses crops, trees, wastes and by-products to make chemical feedstocks and a huge range of everyday consumer goods, like plastics, paints and adhesives. Contributions to this new industry would come from traditional academic programs in crop production, such as agronomy, crop and soil sciences and forestry; programs in environmental sciences, such as ecology, and water and timber management; basic science programs, such as genomics, biology and microbiology; and, programs in industrial production technologies, such as fermentation design, fluid mechanics and systems management. These examples are cited for illustrative purposes only and are not intended to limit the academic programs to just those listed. This solicitation seeks to encourage the widest possible range of creative approaches.

The objective of this new education initiative is to produce graduates who can enter the complex biobased products industry and effectively integrate the knowledge from a wide range of technologies that are necessary for this industry to grow. U.S. universities and colleges are encouraged to design a comprehensive, multidisciplinary curriculum to achieve such a goal from an educational perspective and simultaneously allow the student to gain a hands-on experience through the implementation of an individual relevant research program. It is expected that the student, under the major professor's tutelage will conduct a research program that will make substantive contributions to the biobased products industry.

Graduates will eventually be expected to contribute to improving the efficient utilization of energy in this new industry and enhancing the environmental quality of the surrounding land, air and water. The bio-based products industry's research and other goals are contained in its strategic vision, "Plant/Crop-based Renewable Resources 2020", and its accompanying technology roadmap. These can be found at http://www.oit.doe.gov/agriculture.

The Application Instruction package forms for those intending to submit an application in response to this solicitation are available at this web site.

(URL: http://www.id.doe.gov/doeid/PSD/proc-div.html)

The forms may be found at the Federal Assistance Application and Administration Forms link on the left side of this page. Applicants must complete the following forms:

- ✓ SF-424, Application for Federal Assistance
- ✓ SF-424A, Budget Information – Nonconstruction Programs
- ✓ SF-424B, Assurances, Nonconstruction Programs

- ✓ Certification regarding Lobbying; Debarment, suspension and Other Responsibility Matters; and Drug-Free Workplace Requirements
- ✓ DOE Form 1600,5, Assurance of Compliance, Nondescrimination in Federally Assisted Programs, OMB Burden Disclosure Statement
- ✓ Environmental Checklist

STATUTORY AUTHORITY: The statutory authority for the program is the Federal Non-Nuclear Energy Research and Development Act of 1974 (P.L. 93-577).

CFDA NUMBER: The Catalog of Federal Domestic Assistance (CFDA) Number for this program is 81.086.

DUE DATES: Applications shall be submitted by 3:00 p.m. MST on June 20, 2000**.** Technical and non-technical questions must be submitted in writing to Marshall Garr by facsimile at 208-526-5548 or by e-mail garrmc@id.doe.gov no later than May 19, 2000. Award(s) are anticipated to be made by September 29, 2000.

ADDRESS: Applications (one original and eight copies) shall be submitted to:

Procurement Services Division
U. S. DOE, Idaho Operations Office
Attention: Marshall Garr [DE-PS07-00ID13962]
850 Energy Drive, MS 1221
Idaho Falls, Idaho 83401-1563.

FOR FURTHER INFORMATION CONTACT: Marshall Garr, Contract Specialist, Telephone (208) 526-1536, Facsimile (208) 526-5548, e-mail garrmc@id.doe.gov. The Contracting Officer is Dallas Hoffer.

SUPPLEMENTARY INFORMATION:

A. Background: The U.S. Department of Energy through its Office of Industrial Technologies (OIT) supports industries in their efforts to increase energy efficiency, reduce waste and increase productivity. The goal of OIT is to accelerate the development and use by industry of advanced energy efficient, renewable, and pollution prevention technologies that benefit industry, the environment, and U.S. energy security. One of OIT's core programs is Industries of the Future, which focuses on basic materials and processing industries. The Agriculture Industry of the Future is an important part of this program.

A strategic vision, "Plant/Corp-Based Renewable Resources 2020," for using crops, trees, and agricultural residue to manufacture industrial chemicals and a huge range of every day consumer goods was developed by the U.S. agricultural, forestry, life sciences and chemical communities. A uniquely diverse set of American growers, manufacturers, nonprofit groups, trade associations and academic institutions have come together for the first time to produce a shared vision of the future for this emerging industry. The National Corn Growers Association initiated the visioning effort at a workshop in 1996. Many other organizations subsequently joined the collaboration, and currently a broad range of private and public sector groups are participating. Industry has set the ambitious goal of achieving 10 percent of basic chemical building blocks from plant-derived renewable sources by 2020 which represents a 5-fold increase from the level today. Additional goals are to establish economically viable and environmentally sensitive manufacturing platforms for renewable

plant based products and build partnerships among industry, growers, academia and government to develop commercial applications.

Currently there is a very low volume of renewable resources utilized in the manufacture of consumer goods with the exception of the direct use of lumber for wood products, the use of trees for pulp and paper products, and the use of cotton for garments. Industry has identified the significant barriers that exist in the overall system for conversion of renewable resources into industrial chemicals and every day consumer goods. Barriers have been identified in the "The Technology Roadmap for Plant/Crop-Based Renewable Resources 2020". The four barrier areas are: Plant Science, Production, Processing and Utilization. Goals, priorities and timelines for each of these areas have been developed by industry in an effort to focus research attention.

The OIT Agriculture Industry of the Future home page provides additional information.

B. Project Description: The primary objective of this solicitation is to produce graduate students who have been trained in a variety of academic disciplines and provided research opportunities to gain experience in a cross-disciplinary fashion that will contribute to the complex and novel emerging biobased products industry. The new education initiative is to produce graduates who can enter the complex biobased products industry and effectively integrate the knowledge from a wide range of technologies that are necessary for this industry to grow.

The challenge to the University community is to develop a curriculum that provides the academic training and research environment that crosses the requisite disciplines required to produce such a student. U.S. universities and colleges are encouraged to design a comprehensive, multidisciplinary curriculum to achieve such a goal from an educational perspective and simultaneously allow the student to gain a hands-on experience through the implementation of an individual relevant research program. It is expected that the student, under the major professor's tutelage will conduct a research program that will make substantive contributions to the biobased products industry.

The opportunities and issues cover a wide range of traditional disciplines often located within a single department or college. The objective of this solicitation is to stimulate "out-of-the-box" approaches in the way prospective students for this new industry are trained. The challenge is to provide the cross-disciplinary training necessary to produce a competent and complete new hire, ready to enter the biobased products industry of this new century.

DOE places a premium on improving the efficient use of energy by the manufacturing sector. As energy constitutes over 60% of the input costs for crop production, reducing energy use -- and developing new markets for those crops - - can play a major role in increasing the bottom line for Americas farmers, foresters and manufacturers. This is especially important when the price of commodities continue to be low. A second benefit of the program is enhancing the environment through more effective use of waste products, greater sales of biodegradable consumer goods and the mitigation of greenhouse gases by replacing petrochemical feedstocks.

These grants will cover both the costs for establishing a new cross-cutting academic program in this field as well as full stipends for 2 or so deserving graduate students at the Masters or Ph.D. level.

The emerging biobased products industry uses crops, trees, wastes and by-products to make chemical feedstocks and a huge range of everyday consumer goods, like plastics, paints and adhesives. Contributions to this new industry would come from traditional academic programs in crop production, such as agronomy, crop and soil sciences and forestry; programs in environmental sciences, such as ecology, and water and timber management; basic science programs, such as genomics, biology and microbiology; and, programs in industrial production technologies, such as fermentation design, fluid mechanics and systems management. These examples are cited for illustrative purposes only and are not intended to limit the academic programs to just those listed.

It is anticipated that representatives of the biobased products industry will participate in the proposal reviews and will have an on-going role in the evaluation of the progress of the initiative through an annual review process. At that time, the students and their primary advisers will meet with selected federal officials and industry leaders to discuss interim findings for both the academic and research aspects of the program. The commitment for the awardee is for the duration of the graduate program (usually a two or three year span) with renewal contingent upon successful completion of each annual portion of the program.

Approximately 3-5 grant awards will be made, ranging from approximately $70,000 to $100,000 each a year. Project duration cannot exceed three (3) years. Federal funds are available to fund the first year of research efforts. Out-year funding for selected projects shall depend upon availability of funds, as well as upon satisfactory progress towards project goals and deliverables. Total available funds for each future year is anticipated to be approximately the same as the first year funding. The period of performance for the first budget period is anticipated to be 12 months.

Successful applicants will be required to submit annual, and final reports to DOE.

The grants will be awarded in accordance with DOE Financial Assistance regulations appearing at Title 10 of the Code of Federal Regulations, Chapter II Subchapter H, Part 600 (10 CFR 600).

C. Qualified Applicants:

All institutions of higher learning, whether private or public may submit applications in response to this solicitation. Collaboration among relevant Departments and Extension Service within each college or university is strongly encouraged. Applications from two or more collaborating academic institutions will also be accepted.

E. Application Evaluation:

a. Application Deadline: The deadline for receipt of applications is **3:00 p.m. Mountain Time, June 20, 2000.** Any applications received after applications are forwarded for merit review shall not be evaluated. **Caution:** Applicants assume full responsibility for insuring that the application is received at the specified place by the specified time and date. Procurement Services Division personnel will not pick up packages delivered to the local airport. Neither e-mail nor facsimile applications shall be accepted.

b. Selection of Applications: Only those applications, which meet all of the requirements of this solicitation, will be considered for selection. Selections will be made in accordance with the following selection criteria and programmatic considerations. All

applications will be evaluated and point-scored in accordance with the following criteria. The applications must be fully responsive to each of the criteria.

Criterion 1 - Concept and plan for the Academic program - The academic potential of the proposal will be evaluated considering: a) how relevant the proposed courses are to the overall needs of the biobased products industry as identified in the Renewables Vision 2020 and Technology Roadmap documents; b) the clarity, completeness and adequacy of the statement of objectives of the training program; c) the degree of integration of diverse disciplines into a composite program; d) the ability to monitor progress of training against the defined objectives.

Criterion 2 - Concept and plan for the Research program - The research portion of the proposal will be evaluated considering: a) how relevant the proposed research program is to the overall needs of the biobased products industry as identified in Renewables Vision 2020 and Technology Roadmap documents; b) the clarity, completeness and adequacy of the statement of objectives of the research program; c) the breadth of the research program across various disciplines; d) the ability to monitor progress of the research program against the defined objectives.

Criterion 3 - Interactions with Industry – Academia's relationships with the emerging renewable bioproducts industry are deemed of critical importance both for industry's recruitment of the trained students coming from the program as well as industry's guiding role for the program itself. These interactions will be evaluated based on: a) the degree of industry-university interaction in the design of the proposal and b) the proposed industry involvement during the implementation phase of the project.

c. Weighting of Criteria: The criteria will be based on a maximum of 100 points. Criterion 1 has a maximum point value of 35 points. Criterion 2 has a maximum point value of 35 points. Criterion 3 has a maximum point value of 30 points.

d. Programmatic Selection Considerations: In conjunction with the evaluation results and rankings of individual applications, the Government shall make selections for negotiations and planned awards from among the highest ranking applications, using the following programmatic considerations.

(1) Applications sought to potentially benefit a broad cross-section of the biobased products industry, address a range of high-priority goals of industry's technology roadmap and promote a wide geographic distribution of activities. Applications are also encouraged that further specifically demonstrate the integration into their proposed academic and research programs of the priority for greater energy efficiency and waste reduction in the bio-based products industry.

(2) A balanced portfolio of the academic and research programs is desirable.

(3) The total proposed cost of the project will not be point scored. Applicants are advised, however, that not withstanding the lower relative importance of the project cost, the cost may be a consideration in selections.

e. Merit Reviews: All applications shall be evaluated under the procedure for "Objective Merit Review of Discretionary Financial Assistance Applications" which was published in the Federal Register on May 19, 1998 (Vol. 63, No. 96). Selections for negotiations are expected to be made on or about July 25, 2000, and financial assistance awards

are expected to be made by September 29, 2000. Applicants who fail to cooperate fully and in a timely manner during negotiations may be eliminated from further consideration for awards.

GENERAL CONDITIONS:

The applications will be evaluated in accordance with the Merit Review Procedure, and the criteria and programmatic considerations set forth in this solicitation. In conducting this evaluation, the Government may utilize assistance and advice from non-Government personnel. Applicants are therefore requested to state on the cover sheet of the applications if they do not consent to an evaluation by such non-Government personnel. The applicants are further advised that DOE may be unable to give full consideration to an application submitted without such consent. DOE reserves the right to support, or not to support, all, or any part of any application. All applicants will be notified in writing of the action taken on their applications in approximately 90 days after the closing date for this solicitation, provided no follow-up clarifications are needed. Status of any application during the evaluation and selection process will not be discussed with the applicants. Unsuccessful applicants may request a debriefing. Unsuccessful applications will not be returned.

A. Instructions for Preparation of Applications:

Each application in response to this solicitation must be prepared in one volume. One original and eight copies of each application are required. The technical portion of the application shall be a maximum of 7 pages, including any appendices, excluding costing information and assurance and certification forms provided in the application package. The application face sheet is the Standard Form 424. The application is to be prepared for the complete project period. A separate application must be prepared for each project (i.e., do not combine two or more projects in one application).

a. Proprietary Application Information: Applications submitted in response to this solicitation may contain trade secrets and/or privileged or confidential commercial or financial information which the applicant does not want used or disclosed for any purpose other than evaluation of the application. The use and disclosure of such data may be restricted, provided the applicant marks the cover sheet of the application with the following legend and specifies the pages of the application which are to be restricted in accordance with the conditions of the legend:

"The data contained in pages ____ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government's right to use or disclose data obtained without restriction from any source, including the applicant."

Further, to protect such data, each page containing such data shall be specifically identified and marked, including each line or paragraph containing the data to be protected with a legend similar to the following:

"Use or disclosure of the data set forth above is subject to the restriction on the cover page of this application."

It should be noted, however, that data bearing the aforementioned legend may be subject to release under the provisions of the Freedom of Information Act (FOIA), if DOE or a court determines that the material so marked is not exempt under the FOIA. The Government assumes no liability for disclosure or use of unmarked data and may use or disclose such data for any purpose. Applicants are hereby notified that DOE intends to make all applications submitted available to non-Government personnel for the sole purpose of assisting the DOE in its evaluation of the applications. These individuals will be required to protect the confidentiality of any specifically identified information obtained as a result of their participation in the evaluation.

If an applicant is chosen for negotiations they will be required to submit a brief nonproprietary (maximum two page) summary of the proposed project including anticipated benefits for release to the public during the negotiation period.

b. Budget: A budget period is an interval of time (usually 12 months) into which the project period is divided for funding and reporting purposes. Project period means the total approved period of time that DOE will provide support contingent upon satisfactory progress and availability of funds. The project period may be divided into several budget periods. The project period shall not exceed three years. Each application must contain Standard Forms SF-424, Application for Federal Assistance and SF-424A, Budget Information – Nonconstruction Programs .

c. Cost Information: Information needed to evaluate budget. **It is critical that applicants provide information to support proposed costs to the level of detail described below. Lack of detail can delay awards by several weeks and even put award at risk.**

Personnel (Labor) – Breakdown total personnel by categories or individuals, hours and rates for each. Totals of this breakdown must add to the total proposed amount for direct labor. Proposed personnel rates must tie into current payroll records. The offer must advise if they have been audited by an outside government audit agency, (i.e. DCAA) and if the labor rates are verifiable by this agency. The names, addresses, telephone number and point of contact of this agency must be provided. If the rates have not been audited then the offerer must provide documentation to establish the validity of the proposed labor rates. This documentation may include salary schedules for the appropriate pay categories, payroll extracts, or offers to potential employees showing starting salary rates.

Indirect rates (i.e. fringe benefits, overhead, G&A, cost of money) – The offeror must advise if they have been audited by an outside government audit agency (i.e. DCAA). If they have been audited, then the offeror must provide a copy of the most recent indirect rate agreement or state that the rates are verifiable by this audit agency. If the rates have not been audited, then the offeror must provide documentation to establish the validity of the proposed indirect rates. This documentation must include a listing of the indirect expenses and the allocation base for each rate. This information shows how each rate was calculated.

Travel - The offeror must provide a copy or an explanation of their travel policy. Other supporting documentation includes: 1) explanations of why the proposed travel is

necessary; 2) breakdown number of proposed trips by origin and destination, number of people traveling, length of stay for each trip and the rates for airfare, perdiem, lodging, and car rental costs if applicable. Applicants will be required to attend an annual joint DOE-Industry review meeting, so must plan for that in their travel budget.

Equipment, Materials, Other Direct Costs – The offeror must provide an explanation why the proposed equipment, supplies, and/or other direct costs are necessary for the project. Other supporting documentation includes: 1) an itemization by quantities and rates for each type of equipment, supplies, and/or other direct costs required; 2) the basis for the estimate of these costs (i.e. vendor quotes, price lists, purchase order, historical costs, engineering estimates.

Consultants – Anticipated consultant services must be justified and information furnished on each individual's expertise, primary organizational affiliation. Identify name of consultant, hours and rate for each, and historical documentation of the rates. Consultant's travel costs must be listed separately under travel in the budget.

Subcontract – The offer must provide: 1) a listing of the proposed subawards or subcontracts by name and applicable amount; and 2) an explanation why each of the proposed subcontractors is necessary for the project.

B. Notices to Applicants:

a. False Statements: Applications must set forth full, accurate, and complete information as required by this solicitation. The penalty for making false statements is prescribed in 18 U.S.C. 1001.

b. Application Clarification: DOE reserves the right to require applications to be clarified or supplemented to the extent considered necessary either through additional written submissions or oral presentations.

c. Amendments: Any amendments to this solicitation will be posted on the DOE-ID PSD Current Solicitations Website.

d. Applicant's Past Performance: DOE reserves the right to solicit from available sources relevant information concerning an applicant's past performance and may consider such information in its evaluation.

e. Commitment of Public Funds: The Contracting Officer is the only individual who can legally commit the Government to the expenditure of public funds in connection with the proposed award. Any other commitment, either explicit or implied, is invalid.

f. Effective Period of Application: All applications must remain in effect for at least 180 days from the closing date.

g. Availability of Funds: The actual amount of funds to be obligated in each fiscal year will be subject to availability of funds appropriated by Congress. DOE reserves the right to fund in whole or in part, any, all or none of the applications submitted in response to this solicitation.

h. Assurances and Certifications: DOE requires the submission of pre-award assurances of compliance and certifications which are mandated by law. Refer to paragraph 2 on Page 1 under Summary. These must be completed and provided with the application.

i. Questions and Answers: Technical and non-technical questions must be submitted in writing to Marshall Garr by facsimile at 208-526-5548 or by e-mail garrmc@id.doe.gov no later than May 19, 2000. Questions and answers shall be posted on the DOE-ID PSD Current Solicitations Website as an amendment to this solicitation.

j. Pre-award Costs: The government is not liable for any costs incurred in preparation of an application. Awardees may incur pre-award costs up to ninety (90) days prior to the effective date of award. Should the awardee take such action, it is done so at the awardee's risk and does not impose any obligation on the DOE to issue an award (10 CFR 600.125).

k. Patents, Data, and Copyrights: Applicants are advised that patents, data, and copyrights will be treated in accordance with 10 CFR 600.27.

l. Environmental Impact: An applicant environmental checklist is in the required forms list. Award will not be made until any and all environmental requirements are completed.

m. DOE Minority Economic Impact Loan. DOE Minority Economic Impact loans are not available for this solicitation.

n. **Compliance with Buy American Requirements.** In accepting this award, the recipient agrees to comply with sections 2 through 4 of the Act of March 3, 1933 (41 U.S.C. 10a-10c, popularly known as the “Buy American Act”). The recipient should review the provisions of the Act to ensure that expenditures made under this award are in accordance with it.

o. Lobbying Restriction (Department of Interior & Related Agencies Appropriations Act, 1999). The contractor or awardee agrees that none of the funds obligated on this award shall be made available for any activity or the publication or distribution of literature that in any way tends to promote public support or opposition to any legislative proposal on which Congressional action is not complete. This restriction is in addition to those prescribed elsewhere in statute and regulation.